WHAT IS CLAIMED IS:

1. An optical apparatus comprising:

a metal member that is disposed on a substrate and has a caspidal part;

a light source device for modulating the direction of polarization;

an optical member for irradiating the caspidal part of said metal member with light from said light source device;

a detector for illuminating a sample with the near-field light generated at the caspidal part of said metal member and detecting either light having passed through said sample or light reflected or scattered by said sample; and

a separator for extracting a signal that is synchronized with said polarization modulation from an electric signal outputted from said detector.

2. An optical apparatus that uses the near-field light, comprising:

a light source device for modulating the direction of polarization;

a probe that was provided with one or more metal members each having a caspidal part on it;

a sample support for holding a sample;

a distance controller for controlling the distance between said sample and said probe;

an optical member for irradiating the caspidal part of the metal member of said probe with light from said light source device;

one or a plurality of detectors for illuminating said sample with the near-field light generated from said probe and detecting signal light radiated from said sample;

one or a plurality of separators for separating and detecting a signal that is synchronized with the polarization modulation of said light source device from the signal outputted from said detector(s); and

a signal processor for processing the signal from said separator(s).

3. An optical apparatus that uses the near-field light according to claim 1 or claim 2, wherein the optical apparatus is constructed in such a manner that direction of polarization of light that irradiates the caspidal part of said metal member is switchable either to linearly polarized light parallel to a direction of the point of said metal member or linearly polarized light orthogonal to the direction of the point by said light source device.

4. An optical apparatus that uses the near-field light according to claim 1 or claim 2, wherein an apex angle of the caspidal part of said metal member is 90 degrees.

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5. An optical apparatus that uses the near-field light according to claim 1 or claim 2, wherein a polarization compensator whose transmittance or reflectance is different depending on the polarization is disposed on an optical path of said optical member to effect compensation of polarization characteristics of other optical components.

6. An optical apparatus that uses the near-field light according to claim 5, wherein said polarization compensator is composed of a glass plate that was disposed with its normal slanted to an optical axis of said optical member.

7. An optical apparatus that uses the near-field light according to claim 2, wherein said probe has the shape of a multiangular pyramid or the shape of a cone with one face thereof or opposing two faces thereof being provided with said metal member.

8. An optical device that uses the near-field light according to claim 1, wherein said sample is a recording

medium and said metal member having the caspidal part that was disposed on said substrate is composed in a planar shape.

9. An optical apparatus that uses the near-field light according to claim 7, wherein faces of said probe other than faces on which said metal member is provided are coated with a predetermined metal and at the same time a gap smaller than a half-wavelength of the light of said light source device is provided on the caspidal part thereof.

10. An optical apparatus that uses the near-field light according to claim 9, wherein said predetermined metal used for coating is a metal different from said metal member.

11. An optical apparatus that uses the near-field light according to claim 7, wherein the thickness of said metal member that is provided on said probe is controlled to a predetermined thickness and thereby the optical apparatus is constructed in such a manner that the optical signal that has passed through said probe as propagating light and is detected by said detector is suppressed.